

LIST OF SPECIES OF HYMENOPTERA

Collected in Arizona by the University of Kansas Entomological Expeditions of 1902, 1903, 1904, 1905, and 1906.

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THE determinations of species not already in the collection of the University of Kansas were made by Mr. H. L. Viereck, of the Academy of Natural Sciences of Philadelphia, assisted in certain families by Profs. H. T. Fernald, A. D. MacGillivray, and T. D. A. Cockerell, and Mr. C. T. Brues, to all of whom grateful acknowledgments are hereby tendered. There are still a considerable number of species not yet reported, which will be published at a later date. The localities are given in connection with each species. Oak Creek Canyon camp was made at Thomas's ranch, twenty miles southwest of Flagstaff, in Coconino county, altitude, 6000 feet; the camp at the base of Humphrey's Peak, in Coconino county, was at an altitude of 9500 feet; Congress Junction is in Yavapai county, 125 miles south of Ash Fork, altitude, 3000 feet; the Bill Williams Fork camp, was near Tappan's ranch, on the dividing line between Mojave and Yuma counties, altitude, 1000 feet; San Bernardino ranch is in the southeast corner of Arizona, in Cochise county, our camp being located eighteen miles east of Douglas, altitude, 3750 feet. Tucson and the Baboquivari Mountain camps are in Pima county, at an altitude of 3100 feet and 3750 feet.

Family TENTHREDINIDÆ.

Atomocera ruficollis Norton. Oak creek, 1 specimen.

Hylotoma conspiculata Macgillivray, new species. Oak creek, 1 specimen.

Pristiphora siskiyouensis Marlatt. Oak creek, 1 specimen.

Pteronus coloradensis Marlatt. Oak creek, 1 specimen.

Selandria media Norton. Oak creek, 1 specimen.

Tenthredo variegatus Norton. Oak creek, 11 specimens.

xanthus Norton. Oak creek, 7 specimens.

undetermined species. Oak creek, 1 specimen.

Family SIRICIDÆ.

Cephus cinctus Norton. Oak creek, 1 specimen.

Sirex albicornis Harris, var. *californicus* Norton. 4 specimens.

Family EVANIIDÆ.

Gasteruption pexplexus Cresson. Oak creek, 1 specimen.

Family ICHNEUMONIDÆ.

- Ichneumon* allapsus Cresson. Humphrey's Peak, at base and summit, 3 specimens.
 animosus Cresson, var. rubellus Cresson. 1 specimen.
 arizonensis Viereck, new species. Oak creek, 1 specimen.
 citrinifacialis Viereck, new species. Oak creek, 2 specimens.
 hemimelanarus Viereck, new species. Oak creek, 1 specimen.
 humphreyi Viereck, new species. Humphrey's Peak, at base, 1 specimen.
 lætus Brulle. Oak creek, 1 specimen.
 longulus Cresson. Oak creek, 1 specimen; San Bernardino ranch, 3.
 maurus Cresson. Oak creek, 1 specimen.
 nigrosignatus Viereck, new species. Oak creek, 1 specimen.
 vittifrons Cresson. Oak creek, 1 specimen.
- Hemiteles* lathroscopoides Viereck, new species. Oak creek, 4 specimens.
Pezomachus homalommoides Viereck, new species. Oak creek, 1 specimen.
Cryptus albotarsis Cresson. Oak creek, 1 specimen.
 consobrinus Viereck, new species. Oak creek, 1 specimen.
 politicalypteris Viereck, new species. San Bernardino ranch, numerous specimens.
- Theronia* fulvescens mellipennis Viereck. Oak creek, 10 specimens.
Pimpla annulipes Brulle. Oak creek, 1 specimen.
 pedalis Cresson. Oak creek, 1 specimen.
Ophion purgatum Say. Baboquivari, 1 specimen.
Glypta egregiafovea Viereck, new species. Oak creek, one specimen.
Nototrachys ejunoidus Say. Oak creek, 1 specimen.
 reticulatus Cresson. Oak creek, numerous specimens.
 texanus Cresson. Oak creek, numerous specimens.
- Bassus* lætatarius Fab. Oak creek, two specimens.
Thyreodon morio Fab., race transitionalis Vier., new race. Oak creek, 2 specimens.
Paniscus geminatus Say. Oak creek, Bill Williams fork, Baboquivari, 1 specimen at each place.
Amblyteles hudsonicus Cresson. Oak creek, 1 specimen.
 nubivagus Cresson. Humphrey's Peak, at base, 1 specimen.

Family BRACONIDÆ.

- Chelonus* altitudinis Viereck, new species. San Bernardino ranch, 2 specimens.
 exogyrus Viereck, new species. Bill Williams fork and San Bernardino ranch, 1 specimen at each camp.
 nucleolus Viereck, new species. Oak creek, 1 specimen.
 texanoides Viereck, new species. Bill Williams fork, 1 specimen.
- Agathis* vulgaris Cresson. San Bernardino ranch, 1 specimen.
Crassomicrodus nigricaudus Viereck, new species. San Bernardino ranch.
Iphiaulax cinnabarinus Viereck, new species. Bill Williams fork, 1 specimen.
 faustus Cresson. Bill Williams fork, 2 specimens.
 perepicus Viereck, new species. Bill Williams fork, 2 specimens; San Bernardino ranch, 2 specimens.
 propinquus Viereck, new species. Oak creek, 1 specimen.
 rugator Say. Bill Williams fork, 5 specimens.
- Vipio* erythrus Viereck, new species. Bill Williams fork, 2 specimens.

Family ENCYRTIDÆ.

Copidosoma gelechiæ Howard. Oak creek, 1 specimen.

Family PERILAMPIDÆ.

Perilampus cyaneus Brulle. Oak creek, 2 specimens.

hyalinus Say. Oak creek, 1 specimen.

Euperilampus opacus Ashmead. Oak creek, 1 specimen.

Family CHALCIDIDÆ.

Leucospis affinis Say. Oak creek, 1 specimen; Congress Junction, 1 specimen.

bicincta Viereck, new species, 1 specimen.

sulcata Westw. Oak creek, 2 specimens.

Stomatoceras, undetermined species. Congress Junction, 1 specimen.

Spilochalcis torvina Cresson. Oak creek, 2 specimens.

Chalcis flavipes Fab. Oak creek and San Bernardino ranch, 1 specimen at each camp.

Acanthochalcis argenteomaculata Ashm. Bill Williams' fork, Congress Junction, San Bernardino ranch, and Tucson, numerous specimens.

Family FIGITIDÆ.

Eucoila impatiens Say. Oak creek, 1 specimen.

Figites coloradensis Ashm. Oak creek, 1 specimen.

Family SCELIONIDÆ.

Scelio venata Brues, new species. Baboquivari, 1 specimen.

Family DIAPRIDÆ.

Family CHRYSIDIDÆ.

Ceratopria, undetermined species. Oak creek, 1 specimen.

Notozus marginatus Patton. Oak creek, one specimen.

Holopyga horus Aaron. Oak creek, 1 specimen.

Tetrachrysis cæruleus Fab. Oak creek, 1 specimen; Tucson, 16.

intricata Brulle. Congress Junction. 1 specimen.

lauta Cress. Oak creek, 6 specimens.

tripartita Aaron. Oak creek and Tucson, 1 specimen at each place.

Metapochia, undetermined species. Oak creek, 1 specimen.

Parnopes westcottii Mell. and Brues. Bill Williams fork, 1 specimen.

Family FORMICIDÆ.

Camponotus castaneus Latr., var. *americanus* Mayr. Oak creek, 4 specimens.

lævigatus Smith. Oak creek, 1 specimen.

maculatus Latr., var. *mcCooki* Forel. Oak creek, 4 specimens.

Formica fusca Linn., var. *subpolita* Mayr. Bill Williams fork and San Bernardino ranch, several specimens each.

var. *neoclara* Emery. Tucson, 2 specimens.

var. *argentata* Wheeler. Baboquivari, 1 specimen.

Family DORYLIDÆ.

Labidus mexicanus Smith. San Bernardino ranch, 1 specimen.

Family MYRMICIDÆ.

- Pogonomyrmex barbatus* Smith. Congress Junction, numerous specimens.
barbatus Smith, var. *nigrescens* Wheeler. Cactus Plain, 7 specimens.
californicus Buckley. Baboquivari and Bill Williams fork, 1 specimen at each place.
occidentalis Cresson. Oak creek, numerous specimens.

Family MUTILLIDÆ.

- Mutilla ægina* Cresson. Oak creek, 8 specimens; San Bernardino ranch, 1 specimen.
bellona Cresson. Oak creek, 3 specimens; Humphrey's Peak, 1 specimen.
californica Rad. Oak creek, 13 specimens; Baboquivari, 1 specimen.
fulvohirta Cresson. Baboquivari, 1 specimen.
gloriosa Sauss., var. Congress Junction, Bill Williams fork, San Bernardino ranch, Baboquivari, several specimens.
montivaga Cress. San Bernardino ranch, 1 specimen.
oajaca Blake. San Bernardino ranch, 12 specimens; Tucson, 4 specimens.
ochracea Blake. Congress Junction, 1 specimen.
oreus Cresson. Congress Junction, Oak creek and Bill Williams fork, 1 specimen at each camp; Baboquivari and Tucson, several specimens; San Bernardino ranch, 21 specimens.
pacifica Cress. Bill Williams fork, 1 specimen.
propinqua Cress. San Bernardino ranch, 1 specimen.
sackenii Cress. Congress Junction, 2 specimens; Bill Williams fork, 21 specimens.
snoworum Cockerell and Fox. Oak creek, 1 specimen.
Photopsis belfragei Bdv. Tucson, 2 specimens; Baboquivari, 1 specimen.
Brachycistis glabella Cress. San Bernardino ranch, 6 specimens; Tucson, 1 specimen.

Family TIPHIIDÆ.

- Tiphia tarda* Say. Bill Williams fork, Oak creek, Congress Junction, and San Bernardino ranch, 2 specimens in each camp.
Paratiphia albilabris Spin. Oak creek and Bill Williams fork, 5 specimens in each camp; Tucson, many specimens.

Family SCOLIIDÆ.

- undetermined species. Oak creek, 1 specimen.
Scolia fervida Burm. Congress Junction, Oak creek, Bill Williams fork, San Bernardino ranch, and Baboquivari, numerous specimens each.
 new species. Bill Williams fork, 1 specimen.
Discolia hæmatodes Burm. Bill Williams fork, 1 specimen; Oak creek, 5 specimens.
Elis dives Prov. Bill Williams fork, numerous specimens; San Bernardino ranch, 1 specimen.
pilipes Sauss. Oak creek and Baboquivari, 1 specimen in each place.
pollenifera Vier., var. *a*, new species. Bill Williams fork, 2 specimens.
plumipes Drury. Bill Williams fork, numerous specimens; Baboquivari, 1 specimen.
xantiana Sauss. Bill Williams fork, 1 specimen.

Family MYZINIDÆ.

- Plesia interrupta* Say. Oak creek, very numerous specimens.
frontalis Cresson. Congress Junction, Bill Williams fork, and Baboquivari, numerous specimens.
hamata Say. Oak creek, numerous specimens.

Family EUMENIDÆ.

- Eumenes bollii* Cress. Oak creek, 5 specimens; Congress Junction, San Bernardino ranch, Tucson, and Baboquivari, 1 each.
coloradensis Cress. Oak creek, many specimens.
Odynerus annulatus Say. Congress Junction, Oak creek, and Bill Williams fork, numerous specimens; San Bernardino ranch and Baboquivari, 2 each; Flagstaff, 1; Tucson, many specimens, in some cases the males showing the female pupa of the Coleopteron, *Xenos peckii* Kirby, protruding from a ventral segment.
anormis Say. Oak creek, 6 specimens; Tucson, 18.
arizonensis Cam. Congress Junction, 1 specimen.
behrensii Cress. Humphrey's Peak, 3 specimens.
birenimaculatus Sauss. Humphrey's Peak, 2 specimens.
bustamenti Sauss. Oak creek, 3 specimens.
capra Sauss. Oak creek, 30 specimens.
hidalgi Sauss. Oak creek and San Bernardino ranch, 1 specimen each.
iturbidi Sauss. Oak creek, 1 specimen; Baboquivari, 3.
pratensis Sauss. Congress Junction, 4 specimens; Bill Williams fork and San Bernardino ranch, 2 each.
reflexus Cress. Oak creek, 1 specimen.
taos Cress. Congress Junction and Oak creek, 1 specimen each; Tucson, 8.
texensis Sauss. Congress Junction, 2 specimens.
tigris Sauss. Humphrey's Peak and Oak creek, several specimens from each locality.
tuberculiceps Sauss. Humphrey's Peak, 2 specimens; Oak creek, 20 specimens.
toltecus Sauss. Congress Junction and Oak creek, numerous specimens; Tucson, 8; Baboquivari, 2.
Pterochilus 5-fasciatus Say. San Bernardino ranch, 1 specimen.

Family VESPIDÆ.

- ✓ *Polybia flavitarsus* Sauss. Oak creek and Baboquivari, many specimens each.
 ✓ *Polistes aurifer* Sauss. Oak creek, 3 specimens; Baboquivari, several specimens.
 ✓ *flavus* Cress. Congress Junction, Bill Williams fork, and Baboquivari, numerous specimens at each locality.
 ✓ *navajoe* Cress. Congress Junction, 1 specimen; Oak creek and Baboquivari, many specimens each.
 ✓ *texanus* Cress. Bill Williams fork, 50 specimens; Baboquivari, numerous specimens.
 ✓ *Vespa diabolica* Sauss. Oak creek, 3 specimens.
 ✓ *occidentalis* Cress. Oak creek, many specimens.

Family CEROPALIDÆ (POMPILIDÆ.)

- Pepsis boguei Fox. Oak creek, 4 specimens; San Bernardino, 1 specimen; Tucson and Baboquivari, several specimens.
- chrysothemis Lucas. Congress Junction, 4 specimens; San Bernardino ranch, 1 specimen; Tucson, several specimens.
- cinnabarina Lucas. Oak creek, 2 specimens; San Bernardino ranch, 1 specimen; Tucson and Baboquivari, several specimens.
- domingensis St. Farg. Oak creek, 2 specimens.
- formosa Say. San Bernardino ranch, Bill Williams fork, and Tucson, numerous specimens.
- marginata Beauv. Oak creek, one specimen; Congress Junction, San Bernardino ranch, Baboquivari, and Tucson, numerous specimens.
- montezuma Smith. Oak creek, 6 specimens; San Bernardino ranch, 2 specimens.
- ornata St. Farg. Congress Junction, Bill Williams fork, Tucson, and Baboquivari, numerous specimens; San Bernardino ranch, 1 specimen.
- pallidolimbata Lucas. San Bernardino ranch, 1 specimen.
- Ceropales fraternus Smith. Oak creek, 5 specimens.
- Cryptocheilus conicus Say. Oak creek, 2 specimens.
- undetermined species. Oak creek, 1 specimen.
- Pedinaspis planatus Fox. Congress Junction, 1 specimen.
- Anoplius algidus Sm. Oak creek, 3 specimens.
- apiculatus Sm. Bill Williams fork, 2 specimens; Tucson, 1 specimen.
- fuliginus Say. Bill Williams fork, 1 specimen; Oak creek, 7; Tucson, 1; Baboquivari, 1.
- fulgidus Cresson. Bill Williams fork, 1 specimen.
- ingenuus Cress. San Bernardino ranch, 1 specimen.
- interruptus Say. San Bernardino ranch, 4 specimens.
- marginatus Say. Oak creek, 1 specimen.
- philadelphicus St. Farg. San Bernardino ranch, 4 specimens.
- relativus Fox. San Bernardino ranch, 1 specimen.
- scelestus Cress. San Bernardino ranch, 1 specimen; Tucson, 2.
- subviolaceus Cress. Bill Williams fork, 1 specimen.
- tenebrosus Cress. Tucson, 1 specimen.
- new species. Bill Williams fork, 1 specimen; Tucson, 1.
- new species. Congress Junction, 1 specimen.
- Aporus fasciatus Sm. Tucson, 1 specimen.
- Priocnemis flammipennis Sm. Oak creek, 1 specimen; San Bernardino ranch, 6; Tucson, several specimens.
- heiligbrodtii Cress. Humphrey's Peak and Oak creek, numerous specimens each.
- terminatus Say. Congress Junction, Oak creek, and San Bernardino ranch, 1 specimen at each camp; Tucson, several specimens.
- Agenia acceptus Cress. Tucson, 1 specimen.
- Melanaporus dubius Fox. Oak creek, 2 specimens.
- Mygnumia mexicana Cress. Congress Junction, 1 specimen; Oak creek, 1; San Bernardino ranch, 6; Humphrey's Peak, numerous specimens.

Family SPHECIDÆ.

- Ammophila aberti* Hald. Congress Junction, 3 specimens; Bill Williams fork, 4; Tucson, 1.
argentifrons Cress. Oak creek, 5 specimens; Tucson, 1.
communis Cress. Oak creek, numerous specimens.
gryphus Smith. Oak creek, numerous specimens.
luctuosa Smith. Oak creek, 1 specimen.
macra Cress. Oak creek, numerous specimens.
pruinosa Cress. Bill Williams fork, 7 specimens; San Bernardino ranch, 1; Tucson, 1.
strenua Cress. Oak creek, 1 specimen; Baboquivari, 1.
varipes Cress. Humphrey's Peak and Oak creek, several specimens in each locality.
vulgaris Cress. Humphrey's Peak and Oak creek, 1 specimen in each locality.
xanthoptera Cam. Oak creek, numerous specimens.
 undetermined species. Oak creek, 3 specimens.
- Pelopæus cementarius* Drury. Congress Junction, Oak creek, Bill Williams fork, and San Bernardino ranch, numerous specimens in each locality.
servillei Lep. Congress Junction, Oak creek, Bill Williams fork, and Tucson, several specimens each.
- Chalybion cæruleum* Linn. Oak creek, 1 specimen; San Bernardino ranch, 3; Tucson, several specimens.
- Chlorion cæruleum* Drury. Congress Junction, Oak creek, Bill Williams fork, San Bernardino ranch, Tucson, and Baboquivari, numerous specimens in each locality.
- Isodontia azteca* Sauss. Oak creek, numerous specimens; Baboquivari, 2.
Sphex ashmeadi Fernald. Bill Williams fork, numerous specimens; Congress Junction, 1; San Bernardino ranch, 3; Tucson and Baboquivari, several specimens.
decolorata Blake. Oak creek and Baboquivari, numerous specimens in each locality.
decolorata Blake, var. *baboquivari*, several specimens.
ichneumonea Fabr. Oak creek, abundant specimens; Humphrey's Peak, at base, 1 specimen; Baboquivari, 3.
luçæ Sauss. Oak creek, 5 specimens; Tucson, 2.
pennsylvanica Linn. Oak creek, abundant specimens.
- Sceliphron texanum* Cress. Oak creek, 2 specimens.
Harpactopus abdominalis. Oak creek, 4 specimens.
rufiventris Cress. Oak creek, 7 specimens; San Bernardino ranch, 1 specimen.
- Paraspheg ferrugineus* Fox. Congress Junction and Bill Williams fork, 3 specimens at each camp.
- Prionyx striatus* Smith. Bill Williams fork, 6 specimens; Baboquivari, 1.
thomæ Fabr. Oak creek, abundant specimens; Bill Williams fork, 2; San Bernardino ranch, 1; Baboquivari, several specimens.

Family LARRIDÆ.

- Astata nevadica* Cress. San Bernardino ranch, 2 specimens; Tucson, 1.
nubecula Cress. Tucson, 1 specimen.
unicolor Say. Oak creek, 3 specimens; San Bernardino, 2.
Plenoculus propinquus Fox. Oak creek, 1 specimen.
Lyroda subita Say. Oak creek and San Bernardino ranch, 1 specimen in each locality.
Notogonia argentata Beauv. Oak creek, 1 specimen; Tucson, 1.
nigripennis occidentalis Vier. Bill Williams fork and San Bernardino ranch, 1 specimen in each locality; Baboquivari, 9.
Tachytes abdominalis Say. San Bernardino ranch, 1 specimen.
distinctus Smith. Bill Williams fork, 1 specimen.
fulviventris Cress. Congress Junction, 1 specimen; Oak creek, 11; Baboquivari, 3.
obscurus Cress. Bill Williams fork, 2 specimens; Oak creek, 5; Tucson, 3.
pepticus Say. Bill Williams fork, 3 specimens; San Bernardino ranch, 1; Baboquivari, numerous specimens.
spatulatus Fox. Oak creek, 5 specimens; Baboquivari, several.
Tachysphex propinquus Vier. Oak creek, 4 specimens.

Family BEMBECIDÆ.

- Stizus godmani* Cam. Bill Williams fork, 1 specimen; Oak creek, 2.
grandis Say. Tucson, 1 specimen.
unicinctus Say. Tucson, 1 specimen.
Bembex amœna Hdl. Oak creek, 5 specimens.
fasciata. Humphrey's Peak, at base, and Oak creek, numerous specimens each; San Bernardino ranch and Tucson, 1 each.
nubilipennis Cress. Oak creek and San Bernardino ranch, numerous specimens; Flagstaff and Tucson, 1 each.
sayi Cress. Bill Williams fork and Oak creek, 6 specimens in each locality; Congress Junction, 1; Baboquivari and Tucson, 3 each.
trogodytes Hdl. Bill Williams fork and Oak creek, 1 specimen in each locality.
u-scripta Fox. Bill Williams fork, 17 specimens.
Stictia pictifrons Smith. Oak creek, 20 specimens; Tucson, 1.
Microbembex monodonta Say. Bill Williams fork, Oak creek, Tucson, and Baboquivari, numerous specimens at each place.
pulchella Cress. Oak creek, 2 specimens.
ventralis Say. Oak creek, abundant; San Bernardino ranch, Congress Junction, and Baboquivari, 1 specimen in each locality.

Family NYSSONIDÆ.

- Gorytes bipunctatus* Say. Oak creek, 2 specimens.
costalis Cress. Oak creek, 1 specimen.
eximius Prov. Bill Williams fork, 1 specimen.
spilopterus Hdl. Congress Junction, 2 specimens; Oak creek and San Bernardino ranch, 1 each.
Paranysson texanus Cress. Tucson, 4 specimens.

Family TRYPOXYLONIDÆ.

- Trypoxylon arizonensis* Fox. Bill Williams fork, 4 specimens.
tridendatum Packard. Congress Junction, 2 specimens; San Bernardino ranch, 1; Tucson and Baboquivari, 8 each.

Family PHILANTHIDÆ.

- Eucerceris canaliculatus* Say. Bill Williams fork, 5 specimens; San Bernardino ranch, 3.
rubripes Cress. Oak creek, 15 specimens.
unicornis Patton. Oak creek, 6 specimens.
- Cerceris acanthophilus* V. & C. Congress Junction, 12 specimens; Bill Williams fork, 4; Oak creek, 6; Tucson, numerous.
biungulata Cress. Oak creek, 1 specimen.
ferruginior Viereck and Ckll. Oak creek, 5 specimens; Bill Williams fork, 1; Tucson, many.
fasciata Cress. Oak creek, 3 specimens.
femur-rubrum V. & C. Congress Junction, 1 specimen.
macrosticta V. & C. Oak creek, 2 specimens.
nasica V. & C. Oak creek, 2 specimens.
platyrhina V. & C. Oak creek, 1 specimen.
rinconis V. & C. Congress Junction, 1 specimen; Bill Williams fork, 6; Tucson, 4.
sexta Say. Humphrey's Peak, 1 specimen.
- Philanthus albifrons* Cress. Humphrey's Peak, 3 specimens; Oak creek, 2.
crabroniformis Smith. Congress Junction and Bill Williams fork, numerous specimens; Oak creek, 3; San Bernardino ranch, 1.
punctatus Say. Oak creek, numerous specimens; Bill Williams fork, Congress Junction, and Baboquivari, 1 specimen in each locality; Tucson, numerous specimens.
punctatus cockerelli Dunn. Oak creek, 3 specimens.
new species. Oak creek, 3 specimens.
- Aphilanthops taurulus* Ckll. Congress Junction, 10 specimens.
quadrinotatus Ashmead. Flagstaff, 1 specimen.
new species. Flagstaff, 1 specimen.

Family MIMESIDÆ.

- Mimesa punctata* Fox. Oak creek, 4 specimens.
unicincta Cress. Bill Williams fork, 1 specimen.

Family PEMPHREDONIDÆ.

- Stigmus inordinatus* Fox. Oak creek, 1 specimen.
Pemphredon inordinatus Say. Oak creek, 1 specimen.

Family CRABRONIDÆ.

- Crabro bellus* Cress. Oak creek, 1 specimen.
chrysarginus. Oak creek, 14 specimens.
decemmaculatus Say. Oak creek, 20 specimens.
dilectus Cress. Oak creek, 8 specimens.
imbutis Fox. Oak creek, 5 specimens.
interruptus St. Farg. Oak creek, 1 specimen.
nigrifrons Cress. Humphrey's Peak, 2 specimens.
odyneroides Cress. Oak creek, 5 specimens.
packardii Cress. Oak creek, 14 specimens.
Thyreopus coloradensis Packard. Humphrey's Peak, 2 specimens.

Family OXYBELIDÆ.

- Oxybelus cornutus Say. Oak creek, 50 specimens.
 emarginatus Say. Oak creek, 3 specimens; Bill Williams fork, 1.
 lætus Say. Oak creek, 3 specimens.
 4-notatus Say. Oak creek, 50 specimens.
 Notoglossa emarginata Say. Oak creek and Tucson, 2 specimens each.

Family ANDRENIDÆ.

- Agapostemon melliventris Cress. Congress Junction, 6 specimens.
 nigricornis Fab. Congress Junction, 2 specimens; Tucson, 1.
 tricolor St. Farg. Oak creek, numerous specimens.
 texanus Cress. Bill Williams fork, Oak creek, Congress Junction, and Tucson, numerous specimens.

Family HALICTIDÆ.

- Proteraner ranunculi Robt. Oak creek, 1 specimen.
 Sphecodes, four undetermined species. Oak creek, three species; Congress Junction, one species.
 Halictus ligatus Say. Oak creek, 10 specimens; Tucson, 4.
 Colletes americana Cress. Humphrey's Peak, several specimens; Tucson and Baboquivari, 1 each.
 consors Cress. Oak creek, 1 specimen; Baboquivari, 3; Tucson, 25.

Family PROSOPIDÆ.

- Prosopis affinis Sm. Oak creek, several specimens.
 ruidosensis Ckll. Oak creek, 1 specimen.
 ten new and undetermined species, Oak creek and Humphrey's Peak, at base.

Family NOMIIDÆ.

- Nomia foxii D. T. Oak creek, 2 specimens; Tucson, many specimens.
 nevadensis Cress. San Bernardino ranch and Bill Williams fork, several specimens.

Family PANURGIDÆ.

- Rhophitoides fimbriatus Cress. Humphrey's Peak, 1 specimen.
 Halictoides oryx Vier. Oak creek, 1 specimen.
 Pseudopanurgus rugosus Robt. Oak creek, 1 specimen.
 Panurginus innuptus Ckll. Oak creek, 2 specimens.
 perlævis Ckll. Oak creek, 1 specimen.
 four new and undetermined species.
 Perdita—seven new and undetermined species. Bill Williams fork and Oak creek.

Family ANTHOPHORIDÆ.

- Centris atripes Mocsary. San Bernardino ranch, several specimens; Tucson and Baboquivari, 4 each.
 morsei marginata Fox. San Bernardino ranch, 1 specimen.
 rhodopus Ckll. Bill Williams fork, many specimens; Tucson and Baboquivari, several each.
 Anthophora montana Cress. Oak creek, 1 specimen.
 smithii Cress. Tucson, 2 specimens.
 urbana Cress. Humphrey's Peak and Oak creek, several specimens each; Tucson, 2.

Family ANTHOPHORIDÆ.

- Anthophora walshii* Cress. Oak creek, several specimens.
two new species. Congress Junction.
- Amegilla californica* Cress. Oak creek, 2 specimens.
cleomis Ckll. Oak creek, 4 specimens.
- Clisodon terminalis* Cress. Humphrey's Peak and Oak creek, 1 specimen in each locality.
- Dasiapis ochracea* Ckll. Several specimens.
- Diadasia australis* Cress. Tucson, 1 specimen.
diminuta Cress. Oak creek and Bill Williams fork, several specimens in each locality.
enavata Cress. Baboquivari, 1 specimen.
rinconi Ckll. Bill Williams fork, Oak creek, and Baboquivari, 1 specimen each.
- Tetralonia* (*Synhalonia*) *fuscotincta* Ckll., new species. Oak creek, 1 specimen.
lippiæ Ckll. Oak creek, 3 specimens.
lippiæ, subspecies *sublippiæ* Ckll., new subspecies.
Oak creek. 1 specimen.
- Xenoglossa patricia angustior* Ckll. Congress Junction, 1 specimen.
pruinosa Say. Oak creek, 1 specimen.
- Melissodes agilis* Cress. Oak creek, many specimens.
agilis, var. *subagilis* Ckll. Oak creek, numerous specimens.
aurigenia Cr. Oak creek, numerous specimens.
communis Cress., var. Oak creek and Bill Williams fork, numerous specimens.
confusa Cress. Humphrey's Peak, at base, several specimens.
duplicincta Ckll., new species. Bill Williams fork, numerous specimens; Tucson, 3.
epicharina Ckll., new species. Oak creek, 1 specimen.
var. *a*. Oak creek, 1 specimen.
gilensis Ckll. Oak creek and Bill Williams fork, several specimens; Tucson and Baboquivari, 2 each.
grindeliæ Ckll. Oak creek, numerous specimens.
var. Oak creek, 1 specimen.
hexacantha Ckll., new species. Oak creek, 1 specimen.
var. *a*. Oak creek, 2 specimens.
var. *b*. Oak creek, 1 specimen.
var. *c*. Oak creek, 1 specimen.
intermediella Ckll., var. San Bernardino ranch and Oak creek, numerous specimens.
menuacha Cress. Oak creek and Humphrey's Peak, at base, many specimens.
montana Cress. Oak creek, numerous specimens.
nigrosignata Ckll., new species. Oak creek, 1 specimen.
var. *pallidesignata* Ckll. Oak creek, 2 specimens.
pallidicincta Ckll. Bill Williams fork and Oak creek, several specimens.
prælauta Ckll., new species. Oak creek, 1 specimen.
semitristis Ckll., new species. Oak creek, 1 specimen.
tristis Ckll. Oak creek and Tucson, several specimens.
tenuitarsis Ckll., new species. Oak creek, 1 specimen.

Family MELECTIDÆ.

- Nomada texana* Cress. Oak creek, 1 specimen.
 two new species. Bill Williams fork, 3 specimens.
Phileremus?, undetermined species. Oak creek, 1 specimen.
Ericrocis lata Cress. Bill Williams fork, numerous specimens.
Epeolus lunatus Say. Oak creek, numerous specimens.
occidentalis Cress. Oak creek and San Bernardino, numerous specimens.
 three undetermined species. Oak creek.
Triepeolus verbesinæ Ckll. Bill Williams fork, 1 specimen.
 five new and undetermined species. Oak creek.

Family STELIDÆ.

- Stelis rudbeckiana* Ckll. Oak creek, numerous specimens.
Ceolioxys alternata Say. Oak creek, numerous specimens.
menthæ Ckll. Bill Williams fork, 1 specimen; Tucson, 25.
modesta Sm. Oak creek, 2 specimens.
octodontata Say. Oak creek, numerous specimens; Tucson, 2.
porteriæ Ckll. Oak creek, 2 specimens.
ribis Ckll. Oak creek, 3 specimens.
rufitarsus Sm. Oak creek, 1 specimen.
sayi Robt. Oak creek, 2 specimens.
texana Cress. Oak creek, 2 specimens.
 two undetermined species. Oak creek, several specimens each.

Family MEGACHILIDÆ.

- Osmia mandibularis* Cress., var. Humphrey's Peak, at base, 1 specimen.
 undetermined species. Oak creek, several specimens.
Heriades gracilior Ckll. Oak creek, 4 specimens.
Ashmeadiella bigeloviæ Ckll. Bill Williams fork, numerous specimens.
meliloti Ckll. Oak creek, 10 specimens.
rotundiceps Cress. Oak creek, 4 specimens.
Anthidium emarginatum Say. Humphrey's Peak and Oak creek, several specimens.
maculifrons Sm. Oak creek, 1 specimen; Tucson, several.
maculosum Cress. Oak creek, Humphrey's Peak, at base, and Tucson, several specimens each.
Megachile agustini Ckll. Oak creek, numerous specimens.
avara Cress. Oak creek, numerous specimens.
brevis Say. San Bernardino ranch, numerous specimens.
lanuginosa Sm. (= *brevis* Say.) Oak creek.
cleomia Ckll. Oak creek, 3 specimens.
comata Cress. Oak creek, 3 specimens.
fidelis Cress. Oak creek, several specimens.
near inimica Cress. Oak creek, several specimens.
latimana. Oak creek, 3 specimens.
optiva Cress? Oak creek, several specimens.
perbrevis Cress. Oak creek, several specimens.
pereximia Ckll. Bill Williams fork, 1 specimen.
pugnata Say. Oak creek, numerous specimens.
relativa Cress. Oak creek, several specimens.

Family MEGACHILIDÆ.

- Megachile texana Cress. Oak creek, San Bernardino ranch, and Bill Williams fork, several specimens.
 vidua, race monaidum Ckll. One specimen.
 Ceratina, undetermined species. Oak creek and Bill Williams fork, 1 specimen each.
 undetermined species. Oak creek, 3 specimens.

Family XYLOCOPIDÆ.

- Xylocopa californica Cress. Oak creek, San Bernardino ranch, Baboquivari, and Tucson, many specimens in each locality.
 micans. Oak creek, many specimens.
 new species. Bill Williams fork, Tucson, and Baboquivari, several specimens each.
 undetermined species. Oak creek, 4 specimens.

Family BOMBIDÆ.

- Protoxæa gloriosa Fox. San Bernardino ranch, 10 specimens.
 Oxæa tristis Gribodo. San Bernardino ranch, 8 specimens.
 Psithurus insularis Sm. Oak creek, 1 specimen.
 Bombus bifarius Cress. Oak creek and Humphrey's Peak, at base, 1 specimen each.
 dorsalis Cress. Oak creek, 5 specimens.
 flavifrons Cress. Humphrey's Peak, several specimens.
 howardi Cress. Oak creek and Humphrey's Peak, several specimens.
 morrisonii Cress. Oak creek, many specimens.
 sonorus Say. San Bernardino ranch and Tucson, many specimens; Baboquivari, 1 specimen.

Family APIDÆ.

- Apis mellifica Linn. Abundant at all the camps.

SUMMARY OF FAMILIES AND SPECIES OF HYMENOPTERA.

Tenthredinidæ.....	8	Sphecidæ.....	29
Siricidæ.....	2	Larridæ.....	14
Evaniidæ.....	1	Bembecidæ.....	13
Ichneumonidæ.....	29	Nyssonidæ.....	5
Braconidæ.....	12	Trypoxylonidæ.....	2
Encyrtidæ.....	1	Philanthidæ.....	21
Perilampidæ.....	3	Mimesidæ.....	2
Chalcididæ.....	7	Pemphredonidæ.....	2
Figitidæ.....	2	Crabronidæ.....	10
Scelionidæ.....	1	Oxybelidæ.....	5
Diapriidæ.....	1	Andrenidæ.....	4
Formicidæ.....	6	Halictidæ.....	8
Dorylidæ.....	1	Prosopidæ.....	12
Myrmicidæ.....	4	Nomidæ.....	1
Mutillidæ.....	15	Panurgidæ.....	16
Tiphidæ.....	3	Anthophoridæ.....	47
Scoliidæ.....	8	Melectidæ.....	16
Myzinidæ.....	3	Stelidæ.....	12
Chrysididæ.....	8	Megachilidæ.....	27
Eumenidæ.....	19	Xylocopidæ.....	4
Vespidæ.....	7	Bombidæ.....	9
Ceropalidæ.....	34	Apidæ.....	1

Totals: Families, 44; species, 435.